(Satronova, U.)

... for the degenerate level. The Feinmann diagram ...

degenerate ... and the corresponding ... will become ... F ... and C ... sets always have

Physical Chemistry Institute   Lithuanian SSR,

БПU

ACCESSION NR: AP5016110

AUTHOR: Lyubimov, V.N.; Tolmachev, V.V.

Phys.3.85.1954) for the

Chemical Institute

SUBMITTED: 00

L 06526-67   EWT(1)/EWP(m)   WW

ACC NR: AP7000469   SOURCE CODE: UR/0207/66/000/002/0063/0071

41

B

GOLOVIN, A. M., LEVICH, V. G., and TOLMACHEV, V. V.

ORG: none

"Hydrodynamics of a System of Bubbles in a Liquid of Low Viscosity"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, Moscow, No. 2, Mar-Apr 1966, pp. 63-71

TOPIC TAGS: Reynolds number, hydrodynamics

Translation: The effect of the gas content and the shape occupied by a system of bubbles on the rate of their rise in an unlimited medium and a vertical cylindrical column is investigated. Deformations of the system which are advantageous from the energy standpoint are considered, with the assumption of a homogeneous and isotropic distribution of the bubbles in the system. A theoretical description of the motion of the system of gas bubbles in the liquid is necessary for study of the bubbling processses. This problem has been repeatedly studied in the case of small Reynolds numbers (Re   1) on the basis of the so-called model of cells. In reference [1]* a similar model was used for description of the motion of a system of bubbles of moderate dimensions (Re 300). It was assumed that at all instants of time each bubble is located at the center of an imaginary spherical cell of liquid, the radius of which is equal to the mean distance between the centers of the bubbles in the system. Also, the normal component of the velocity of the liquid is equal to zero on the surface of the cell. The first assumption is equivalent to the principle

Card 1/2

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L 06526-67

ACC NR: AP7000469

of the homogeneity and isotropicity of the system, but the second is not physi-
cally convincing in any way. In this work results of the calculation of the
rate of rise of a system of bubbles are obtained for the case of bubbles of
moderate dimensions with a low gas content. These results differ even quali-
tatively from similar results obtained on the basis of the cells model. This,
apparently, indicates that the cells model is unsatisfactory, at least in the
case of low gas content. Orig. art. has: 1 figure and 7 formulas. [JPRS: 37,330]

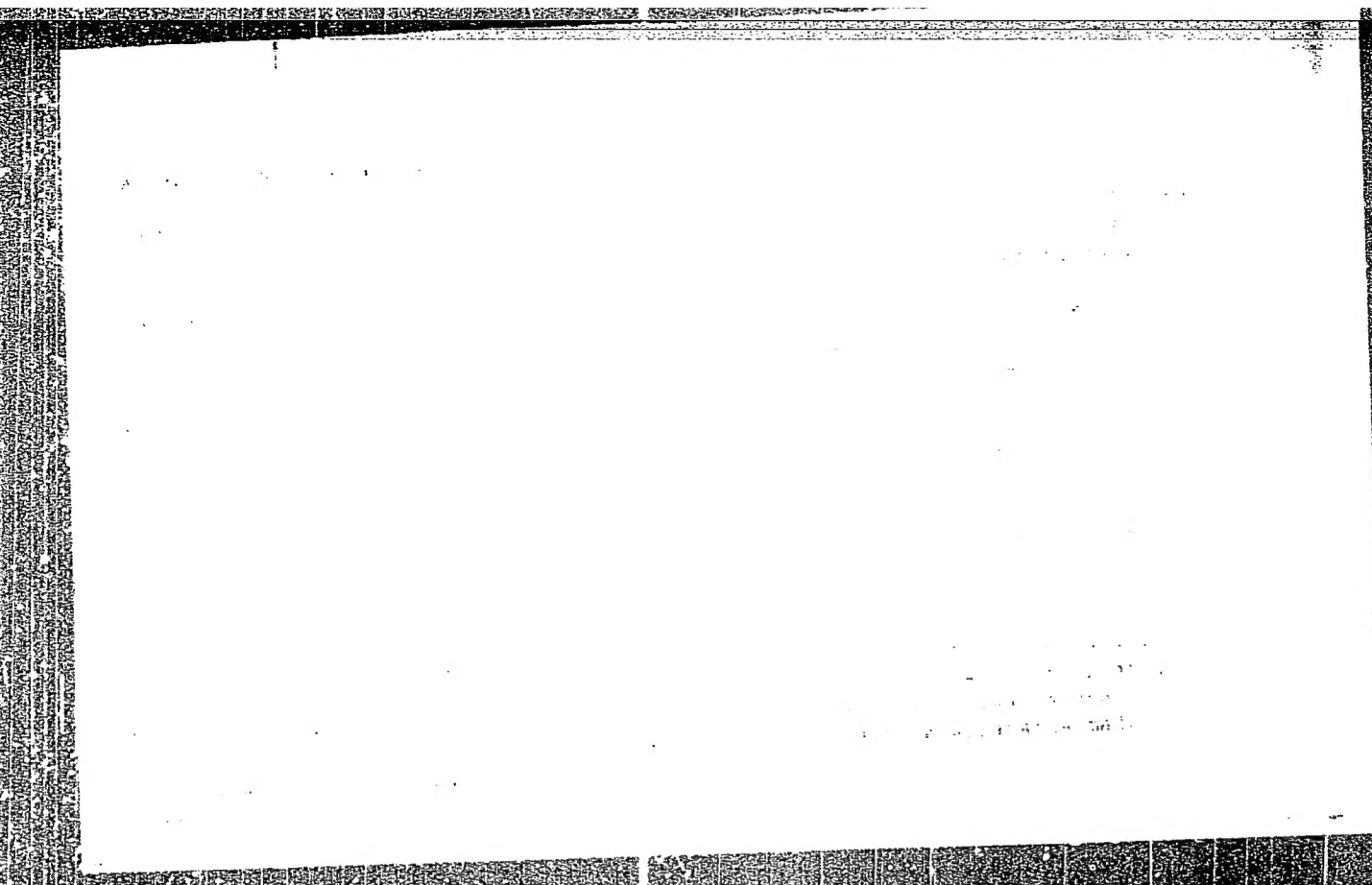SUB CODE: 20 / SUBM DATE: 13Nov65 / ORIG REF: 007 / OTH REF: 004

Card 2/2

YUDITSKIY, A.I., inzh.; TOLMACHEV, Ye.P., inzh.; NIKITIN, V.I., inzh.

New wear-resistant IKhEhl7N$_3$G$_3$ alloy. Mashinostroenie no.5:
37-38 S-O '64   (MIRA 18:2)
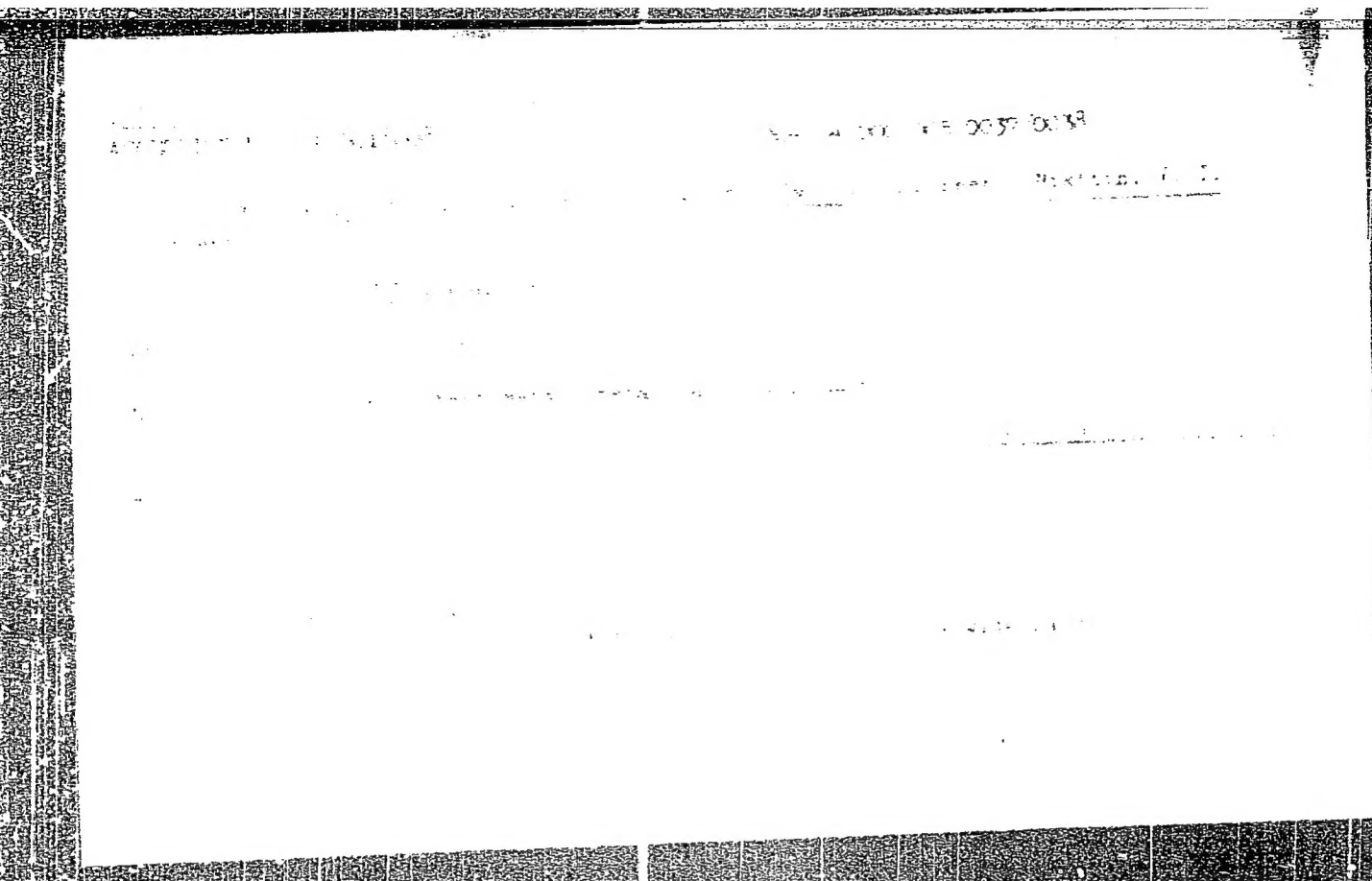
ACCESSIBILITY

significantly

201									
502	2.98	1.27	0.86	17.09	2.42	--	0.058	415	

TOLMACHEV, Ye. P.

"On Experience with Molding Sand Milled in a Special Vibration Mill, Which Solves
the Problem of Obtaining Castings with a Clean Surface not only with Shell Molds
but also with Conventional Molding Methods."

report presented at Scientific-Technical Session on Progressive Technology of
Casting Molds, organized by the NTOMAShPROM of the Khar'kov Oblast', in Khar'kov,
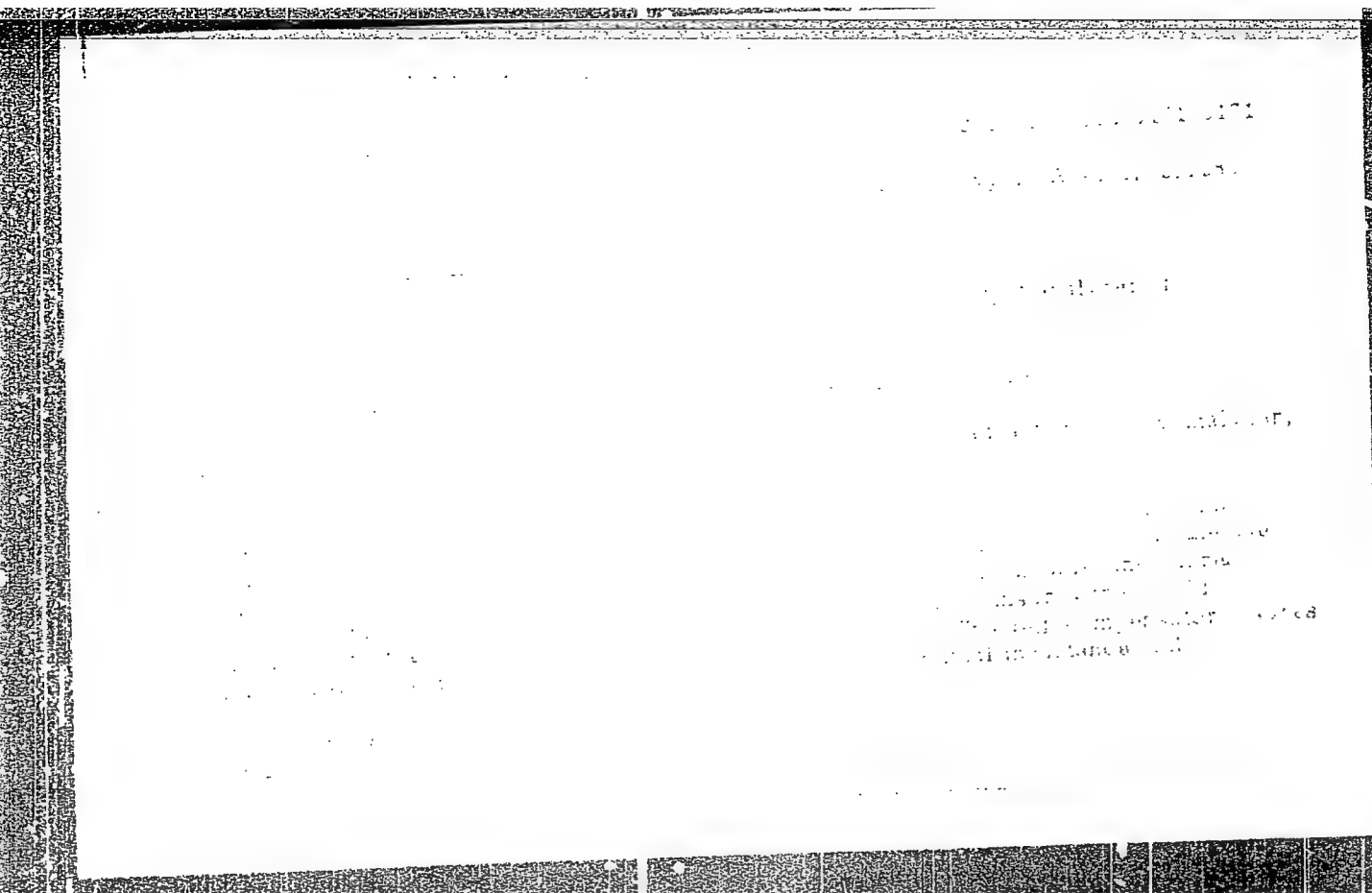14-16 Nov 1957.

Liteynoye Proizvodstvo, 1958, No 4, pp.28-30

Voroshilov Diesel - Locomotive Plant

TOLMACHEV, YE.P.

IVANOV, V.I.; TOLMACHEV, Ye.P.

Using artificially crushed sans for shell molding. Lit. proizv.
no.1:8-10 Ja '58.   (MIRA 11:2)

(Sand, Foundry)

L 1697-66 EWT(1)/EWA(h)
ACCESSION NR: AR5008080

S/0274/65/000/001/A083/A083
621.317.757.213

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz'. Svodnyy tom, Abs. 1A504

AUTHOR: Tolmachev, Ie. S.; Tuz, Yu. M.

TITLE: New method for increasing the sensitivity of commercial-frequency amplitude analyzers

CITED SOURCE: Tr. Kiyevsk. politekhn. in-ta, v. 42, 1963, 187-190

TOPIC TAGS: harmonic analyzer

TRANSLATION: The error caused by higher-order 1—3% harmonics is equal to the error caused by 30, 15, or 10% of third-, fifth-, or seventh-harmonic, respectively. As higher harmonics are difficult to measure, a circuit is suggested which augments their content in proportion to their frequency. The circuit includes a deep-negative-feedback amplifier with an adjustable working current. An inductance coil in the feedback circuit ensures n-fold augmentation of the amplitude of the n-th harmonic. The measurement is made by a conventional heterodyne analyzer which receives the signal from the coil secondary. Simultaneously, the entire signal is also amplified. In a practical hookup, the 10-th harmonic amplitude was increased by 31.4 times, the 25-th, by 80 times.

Card 1/1   SUB CODE: EC   ENCL: 00

KROLIAK, Yu.A.;

Choice of the modulation frequency in measuring the life of periodic compositions. Izv. vys. ucheb. zav.; radiofiz. . . . 526-529 Jl-Ag '64.

OGORELIN, M.A., inzh.; ORNATSKIY, P.P., kand.tekhn.nauk, dotsent; TOLMACHEV,
Ye.S., inzh.

Measurement of electrical magnitudes in the presence of non-
sinusoidal currents and voltages. Izv. vys. ucheb. zav.; energ.
5 no.7:25-30 Jl '62.   (MIRA 15:7)

TOLMACHEV, Yu., inzh.-podpolkovnik; MOROZ, N., inzh.-podpolkovnik.

New apparatus for training radiotelegraph operators. Voen. sviaz.
16 no.1:11-15 Ja '58.   (MIRA 11:2)
                    (Radio operators—Study and teaching)

MOROZ, Nikolay Andreyevich; TOLMACHEV, Yuriy Aleksandrovich; KON'KOV, V.I.,
    otv. red.; SVERDLOVA, I.S., red.; SHEFER, G.I., tekhn. red.

[Repair of telegraph apparatus and automated attachments] Remont tele-
grafnykh apparatov i pristavok avtomatizatsii. Moskva, Gos. izd-vo
lit-ry po voprosam sviazi i radio, 1961. 239 p.   (MIRA 14:11)
            (Telegraph—Equipment and supplies)

ACC NR: AP7004146

AUTHOR: Tolmachev, Yu. A.

ORG: none

TITLE: Choice of a method of estimating the cross section of stepwise excitation

TOPIC TAGS: excitation cross section, excited state, plasma resonance, transition probability, forbidden transition, neon, optic transition

ABSTRACT: It is shown that some of the presently available formulas, derived on the basis of the methods of classical physics, can be used to estimate the cross sections for stepwise excitation of the high-energy states of atoms in a plasma at medium pressures. To avoid the ambiguity resulting from the fact that such estimates may yield under certain conditions identical estimates for both allowed and forbidden transitions, the author examines the results of averaging several approximations of the cross sections over a Maxwellian distribution and shows that in those cases when a given level can occur simultaneously from several lower levels it is possible to neglect the stepwise excitation corresponding to the forbidden transitions and thus avoid the ambiguity. The results of calculations by the Bethe and Thomson formulas are then compared with the experimental values of the stepwise excitation for the transitions

Card 1/2

ACC NR: AP7004146

$2p^53sX \rightarrow 2p^53pY$ in neon and the reasons for various discrepancies between them are analyzed. It is concluded that at sufficiently high electron temperatures the step-wise excitation of allowed transitions has much higher efficiency than that of forbidden transitions, and that in those cases when the populations of the lower levels do not differ too much it is sufficient to take only the allowed transitions into account, using Bethe's formula for the cross-section calculation. Orig art. has: 2 figures, 10 formulas, and 2 tables.

SUB CODE: 20/ SUBM DATE: 13May61/ ORIG REF: 005/ OTH REF: 003

Card 2/2

L 00257-67   EWT(l)/EWT(m)/EWP(t)/ETI   IJP(c)   JD/AT

ACC NR: AP6031965

52
5D

B

27

AUTHOR: Tolmachev, Yu. A.

ORG: none

TITLE: Elementary processes in direct-current gas discharge plasma in helium

TOPIC TAGS: gas discharge plasma, helium plasma, excited state, electron energy level

ABSTRACT: In comparing measurements of the occupancies of excited atomic states in a gas discharge plasma with calculated values, it is usually assumed that the atoms are excited from the ground level by electron impact, and that the destruction of the excited levels is due to spontaneous radiation. It is also assumed that the distribution function of the electrons is Maxwellian. At high pressures, it becomes necessary to consider stepwise excitation, whose role rapidly increases because of the increased occupancy of the lower excited levels and because the distribution function becomes poorer in fast electrons than the Maxwellian function. If it is assumed that the destruction of the upper levels occurs mostly during collisions with atoms in the unexcited state and the occupation proceeds in stepwise fashion, the balance equation assumes the form

$$N_i n_e \langle \sigma v \rangle_{in} = R p^k N_n,$$

where p is the gas pressure, R is the reaction rate constant, and the exponent k is

Card 1/2

UDC: 533.9:546.291

I. 06257-67

ACC NR: AP6031965   2

equal to unity in double collisons and two in triple collisions. The pressure depend-
ence of R supports the assumption that the destruction occurs during triple collisions.
Then, using the formula

$$\Delta N = N_n N_0^2 \frac{4\pi^2}{3}\left(\frac{3kT}{\pi m}\right)^{1/2} r_n^4$$

for the frequency of triple collisions and assuming that the radius of the interaction
sphere substantially exceeds the size of the unexcited atom, one can calculate r_n.
Calculations show that when $n > 6$, $r_n \approx 3 \times 10^{-8}$ n cm. The existence of this depend-
ence explains the observed relationship $N_n n^5 = $ const. The data obtained once again
point to the existence of molecular or other complex processes in inert-gas plasmas
even at medium pressures. Author thanks S. E. Frish and O. P. Bochkova for their at-
tention to this work and for discussing its results. Orig. art. has: 2 figures and 8
formulas.

SUB CODE: 20/ SUBM DATE: 14Mar66/ ORIG REF: 008

Card 2/2 eg/v

TOLMACHEV, U. M.

PROCESSES AND PROPERTIES INDEX

9

*The Qualitative and Quantitative Determination of Lithium, Rubidium, and Caesium by the Spectrum Method.   U. M. Tolmachev (*Izvestia Akademii Nauk S.S.S.R.* (*Bull. Acad. Sci. U.R.S.S.*), 1934, [vii], 904-920).—[In Russian.] See *Met. Abs.*, 1935, **2**, 244.—S. O.

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

TOLMACHEV, U.M.

PROCESSES AND PROPERTIES INDEX

*The Qualitative and Quantitative Determination of Lithium, Rubidium, and Caesium by the Spectrum Method. U. M. Tolmachew (Doklady Akademii Nauk S.S.S.R. (Compt. rend. Acad. Sci. U.R.S.S.), 1934, 1, (8), 464–470).— [In Russian and German.] The qualitative and quantitative determination of Li, Rb, and Cs is best carried out with the intensive components of the first doublets of the main series. A higher sensitivity of the determination is attained by using neocyanine as a sensitizer, than by working with the secondary doublets. With this method the lines Rb 7800·3, Cs 8521·1, and Li 6707·8 disappear last, with diminishing concentration.—N. A.

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

Presence of rubidium, beryllium, gallium and strontium in nephelites. Yu. M. Tolmachev and A. N. Filippov. Compt. rend. acad. sci. U. R. S. S. 3, 366-8 (in English 368-9)(1934).—Spectrographic analyses of 10 samples of nephelite were made for Li, Rb, Cs, Ga, Be and Sr, showing Li 0.001-0.0002, Rb 0.04-0.008, Cs none to 0.001, Ga 0.01-0.002, Be 0.012-0.0003 and Sr 0.12-0.002%, resp. The ratios among the amts. of Li and Na, Na and K, K and Rb, Rb and Cs and Ga and Al in 2 types of nephelites are given.   H. A. Smith

The presence of rare alkaline metals in amazonites. Yu. M. Tolmachev and A. N. Filippov. *Compt. rend. acad. sci. U.R.S.S.* 1, 321-3(in English 321-5)(1935). Amazonites from Ilmenski, from Madagascar and from Colorado and Khibin showed, resp.: Rb more than 1%, Cs 0.05%; Rb 1%, Cs 0.15%; and Rb 0.1-0.25%, Cs 0.003-0.01%. The Sr contents (0.0015-0.01%) exceed the quantity which could have been produced by Rb radioactive disintegration. The bluish green color of amazonites is not due to Cu (Cu not more than 0.001%).

L. K. Steiner

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Spectral analysis of Magnetigorsk pig iron and slag.
Yu. M. Tolmachev. *J. Applied Chem.* (U. S. S. R.) 8,
920–32(1935). The cast Fe contains not more than 0.1%
of Ti, chiefly as TiC, together with traces of V, Cr, Co, Ni,
Ca, Mg, Al, Na, Cu and Be. The slag contains, apart
from the usual constituents, Sr, Ba, Ti, Be, Cr and V.
B. C. A.

COMMON ELEMENTS

MATERIALS INDEX

OPEN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1585. Colour of Corundum. I. I. Islamov and J. M. Tolmačev. *Comptes Rendus (Doklady) de l'Acad. des Sciences, U.S.S.R.* T. I. pp. 11-13, 1936. *In English.*—Comparison of the spark spectra of solutions (prepared by fusion with borax and solution in dilute HCl) of red, blue and grey corundum from Semiz-Bugu (N. Kazakstan) with those of suitable standard solutions for the elements determined quantitatively, and examination of the spectra for those determined qualitatively give the following results :—

Corundum	Determined quantitatively %				Determined qualitatively	
	Cr	Ti	V	Ga	Appreciable amounts of	Traces of
Red	0·18	0·01	0·04	0·003	Mg Ni Fe Ni	Na Ca Sr Be Mn
Blue	0·002	0·20	trace	0·003	Ca Sr Ni Fe Si	Na Mg Be Mn Cu
Light greygreen	trace	0·03	trace	0·003	Ca Sr Mg Si	Na Be Mn Ni Cu Sn

It is concluded that the red colour is due to Cr, the blue to Ti. Qualitative examination of greyish-blue and bluish-green kyanite from the same locality shows in the former appreciable amounts of Ca, Ti, Cr, less of Sr, Mg, Fe, V and Ga, and traces of Na, Mn, and Ni ; in the latter considerable amounts of Ca, Mg and Cr, appreciable of Na and V, less of Sr, Fe, Ti, Ni and Ga, and traces of Mn.

C. A. S.

METALLURGICAL LITERATURE CLASSIFICATION

The presence of lithium, rubidium and cesium in basalts, granites, feldspars and strata of clay. Yu. M. Tolmachev and A. N. Filippov. Akad. V. I. Vernadskomu k Pyatidessyatiletiyu Nauch. Deyatelnosti 1, 303 21(1936); Chem. Zentr. 1938, I, 1718. A tabular report is given of the results of spectrographic analyses of the minerals mentioned from various deposits in the U. S. S. R.

M. G. Moore

A S A - S L A METALLURGICAL LITERATURE CLASSIFICATION

Spectral analysis of mineral waters. M. T. LINDTROP and J. M. TOLMACHEV (Compt. rend. Acad. Sci. U.R.S.S., 1936, 3, 317—319).—An analysis of Caucasian mineral waters for Li, Rb, and Cs, by means of a Hilger spectrograph, has been made. Li and Rb are present in all waters and Cs detected in a few samples, but in too small proportion to be determined. The various waters can be divided into three groups according to the val. of the ratios Na : Li and K : Rb. D. C. J.

TOLMACHEV, I.M.

The chemical composition of cassiterites. I. Larinov and I. M. Tolmachev. Compt. rend. acad. sci. U.R.S.S. 14, 303 6 (1937).—The results of qual. spectral analysis of 7 samples of cassiterites obtained in the Turkestan mountains are tabulated. Two of these were believed to have segregated during the hydrothermal phase and 5 of them during the pegmatitic phase. The table shows that a marked difference exists between the cassiterites of the different deposits. The hydrothermal cassiterites have a much higher As content than the pegmatitic ones, and V was present in the former and not in the latter. Pegmatitic cassiterites also differ in contg. considerable quantities of Cb and Ta, higher amts. of Zr and Mn, and minute quantities of Be, Ge, In, Ga and Y. The elements Ni, Pb, Cu and Cr are not characteristic for any of the phases. The study of these differences is regarded as of great use in prospecting Sn ore deposits. The app. employed a condensed spark and a d.-c. arc, 110-v., 6 amp. The spectra were photographed with a large Schmidt and Haensch quartz-spectrograph.

A. W. Furbank

C A

3

Absorption spectra of gaseous azoimide. Yu. M. Tolmachev. *J. Phys. Chem.* (U. S. S. R.) 14, 10-15 (1940).—The ultraviolet absorption spectrum of N_3H (obtained by the action of dil. H_2SO_4 on BaN_6) at 20 mm. pressure consists of 2 bands. The first from 2850 to 2320 A. consists of 8 diffuse bands each of about 30 A. width, at 2812, 2755, 2687, 2637, 2580, 2533, 2441 and 2360 A. The system consists of terms representing transitions from 2 initial vibration states to a series of vibration levels of the first excited electron state. The second system lies between 2301 and 2010 A. and consists of 15 diffuse equidistant bands, for which the av. $\Delta \nu$ is 410 cm.$^{-1}$, the av. width 10-12 A. Above 40-60 mm. pressure, continuous absorption takes place from $\lambda\lambda$ 2500 to 2000 A.   P. H. Rathmann

CA

PROCESSES AND PROPERTIES INDEX

Spectra of the explosion flame of gaseous hydrazoic acid and of its mixtures with mercury vapors. Vu. M. Tolmachev. J. Phys. Chem. (U.S.S.R.) 14, 615-27 (1940). The spectra of the explosion at 18 to 130° and the slow thermal decompn. flames are very similar. The most intense band is the β-band of NH at $\lambda = 336.7$ mμ, contg. 30-40% of the total emission. In the explosion of N_3H·Hg vapor mixts., the line 2536.5 A. and the lines corresponding to the Hg transitions 7^3S_1 and $6^3P_{0,1,2}$ · $7^3P_{0,1,2}$ are observed. F. H. Rathmann

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

C A

PROCESSES AND PROPERTIES INDEX

Absorption spectra of the vapors of compounds of uranium with chlorine. Yu. M. Tolmachev. J. Phys. Chem. (U. S. S. R.) 15, 862 0(1941).—T studied the absorption spectra of UCl_5 and UCl_4 at various temps. UCl_4 possesses a continuous absorption spectrum. The primary process corresponding to this absorption is, apparently, dissocn. into UCl_3 and Cl. In the absorption spectrum of UCl_5 there are 2 wide diffuse bands at 2680 A. and 3750 A. and 2 regions of continuous absorption; interpretation of this spectrum is as yet not possible. No correspondence was found to exist between the absorption spectra of vapors of UCl_4 or UCl_5 and the absorption spectra of any other compds. of U either in solid state or in soln. It is possible to consider the mols. of UCl_4, and perhaps of UCl_5, in the gaseous state as at. mols. rather than ionic. G. M. K.

3

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

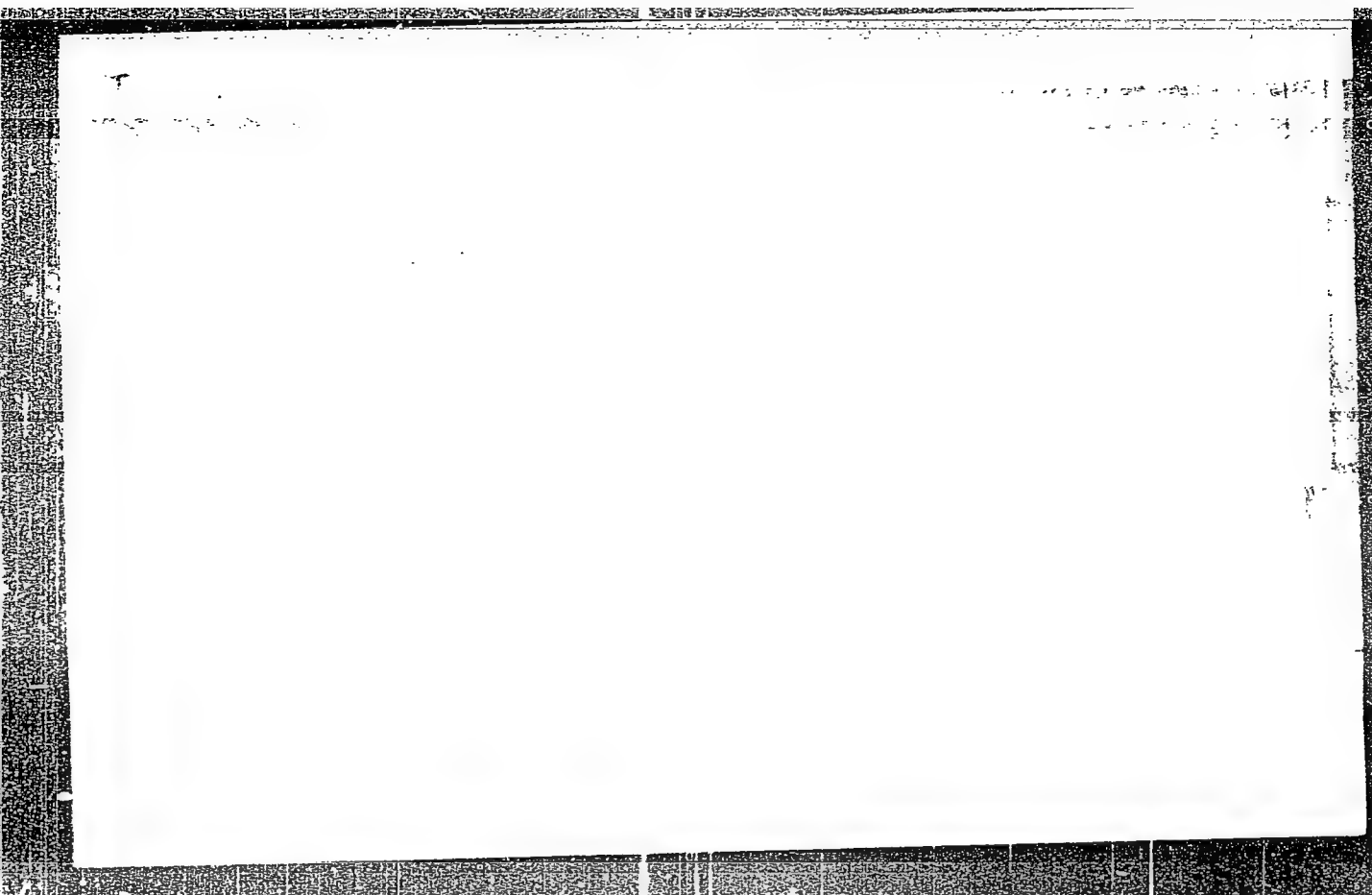2062. Adsorption of Uranyl Salts on Solid Adsorbents by Y M Tolmachev
Izvest Akad Nauk SSSR No. 1 28-34 1943 (NP-742)

A study was made of the adsorption of uranyl nitrate from aqueous
solutions onto charcoal and various schists. On charcoal the
uranyl ion is adsorbed reversibly according to Freundlibk's law.
On schists the uranyl ion adsorption is irreversible. The
comparison of the adsorption capcity of the schists from
Leningrad Province with their uranium contents shows that the
process of accumulation of uranium in these schists during the
corresponding geological period was essentially an adsorption of
uranyl ions from aqueous solutions.

Effect of the background in measurements of the intensities of spectral lines. Yu. M. Tolmachev. *J. Expl. Theoret. Phys.* (U.S.S.R.) 13, 93-100(1943).—Schwarzschild's law (cf. *C. A.* 23, 30) is used to show the relation between latent ds. produced by the successive action of 2 different radiations on the same photographic plate and the intensity of the radiations as well as the duration of each exposure. Formulas are given for this relation from which the relative intensities of the spectral lines can be calcd.; allowance is made for the background in the case where the background lies in the range of easily measured ds.

Author

PROCESSES AND PROPERTIES INDEX

Absorption spectra of aqueous solutions of salts and complex compounds of thorium. Yu. M. Tolmachev. Bull. acad. sci. U.R.S.S., Classe sci. chim. 1944, 329-4 (English summary).—The absorption spectra of aq. solns. of Th chloride, sulfate, carbonate complex and oxalate complex were detd. in the ultraviolet region, to 2200 A. On the basis of this, the carbonate complex is assigned the structure $(Th(CO_3)_4(OH)_2)$ ——. The similarity of spectra of the chloride and of the above complex, indicate that at least a part of the Th in the chloride soln. forms a complex ion. The sulfate does not show evidence of complex formation.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TALMACHEU JU M

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TOLMACHEV, Yu.M.

Adsorbtion of uranyl salts on solid adsorbents. Trudy Radiev.
inst. AN SSSR 6:55-63 '57.   (MIRA 11:2)
                    (Uranyl salts)
                    (Adsorbtion)

15-1957-10-14148

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,
                    p 125

AUTHORS: Moskal'kova, E. A., Tolmachev, Yu. M.

TITLE: The Separation of Scandium From the Rare Earths and
            Zirconium (Otdeleniye skandiya ot redkozemel'nykh ele-
            mentov i tsirkoniya)

PERIODICAL: Tr. Radiyev. in-ta. AN SSSR, 1957, vol 7, pp 141-143

ABSTRACT: A method has been developed for the separation of Sc
            from the rare-earth elements and from Zr, based on the
            high solubility of $(NH_4)_3ScF_6$ and the insolubility of
            fluorides of the rare earths in a solution of ammonium
            fluoride. Zr is subsequently separated as a phosphate.
            The following is a resumé of the method. To a solution
            containing rare earths, Zr, and Sc, a five-fold multiple
            of dry NH_4F is added (depending on the sum of the ele-
            ments). The resulting acid is neutralized with ammonia
            until it has a slight odor. The solution with the pre-
Card 1/2   cipitated sediments is heated to $60°$. The sediment is

15-1957-10-14148

The Separation of Scandium From the Rare Earths and Zirconium

centrifuged and washed in a 5% solution of ammonium fluoride.
The washing water is added to the filtrate and is treated in a
platinum with a 30% solution of KOH. The solution with the
alkali is then heated to boiling. Sc and Zr, having been pre-
cipitated as hydrates, are filtered off, washed in hot water,
and dissolved in a 15% solution of H_2SO_4. Freshly prepared
doubly decomposing ammonium phosphate is added to the resulting
solution in order to precipitate the Zr. Sc remains in the fil-
trate, from which it is precipitated as a hydrate by alkali.
The $Sc(OH)_3$ sediment is filtered off, carefully washed from the
PO_4^{3-}, and dissolved in a small quantity of 2 normal HCl (no more
than is necessary to dissolve it). It is then diluted with
water to such a volume that the acid concentration is 0.3 nor-
mal; and the Sc is precipitated from the solution by oxalic
acid. The Sc oxalate thus obtained is centrifuged, washed in a
0.1% solution of oxalic acid, and roasted to form an oxide.

Card 2/2

K. N. Ryabicheva

SOV/89-6-5-4/33

21(8)
AUTHORS:

Shiryayeva, L. V., Tolmachev, Yu. M.

TITLE:

On the Chemical Behavior of Mo^{99} Which Is Formed During the Irradiation of Uranium Oxides by Slow Neutrons (O khimicheskom povedenii Mo^{99}, obrazuyushchegosya pri obluchenii okislov urana medlennymi neytronami)

ABSTRACT: U_3O_8- and UO_2-preparations are annealed in an argon current and in a vacuum after irradiation, and the extraction yields are measured in dependence on the annealing temperature. The results obtained are shown by a graph. In addition, volatilization of Mo^{99} from preparations annealed at high temperatures was measured. The results obtained are tabulated. The methods of producing the initial preparations and the method of leaching Mo^{99} from the said preparations are described by reference 1. Annealing in a vacuum is described separately. The following conclusions may be drawn from the results obtained: 1) The extraction of Mo^{99} from irradiated U_3O_8- and UO_2-preparations increases with increasing annealing temperature in the vacuum in the same manner as in the argon-, hydrogen-,

Card 1/3

On the Chemical Behavior of Mo^{99} Which Is Formed During the Irradiation
of Uranium Oxides by Slow Neutrons   SOV/89-6-5-4/33

and oxygen current. From UO_2 annealed in an oxygen current
at $1200^{\circ}C$ it was possible to extract 97% of Mo^{99}. In the case
of U_3O_8, which was annealed at $1200^{\circ}C$ in a vacuum, only 71%
Mo^{99} could be extracted. 2) In $U_3O_8-UO_2$-preparations annealed
in an oxygen current and in a vacuum, volatilization of Mo^{99}
begins at $900^{\circ}C$. With UO_2 annealed in an oxygen current at
$1000 - 1200^{\circ}C$, an increased volatilization of Mo^{99} was found.
3) It was possible by extrapolation to determine also the
dependence of the volatilization of Mo^{99} on the annealing
time. If U_3O_8 is annealed in a vacuum for 5 hours, the vola-
tilization of Mo^{99} is 100%, whereas in the case of UO_2 an

annealing time of 7 hours is necessary. 4) On the basis of
experimental data it was possible to plot the curves: loga-
rithm of the percentage of extraction against $1/T$. It was
further possible to calculate the activation energy for the
extraction of the Mo^{99} from uranium oxides. There are 3 fig-
ures, 1 table, and 14 references, 2 of which are Soviet.

Card 2/3

TOLMACHEV, Yu. M.

BJP

PHASE I BOOK EXPLOITATION   SOV/4853

Akademiya nauk SSSR. Radiyevyy institut.

Radiokhimicheskiy analiz produktov deleniya; sbornik statey
    (Radiochemical Analysis of Fission Products; Collection of
    Articles) Moscow, Izdatel'stvo Akademii nauk SSSR, 1960.
    134 p. Errata slip inserted. 6,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Radiyevyy institut imeni
    V. G. Khlopina.

Ed.: Yu. M. Tolmachev, Prof., Doctor of Chemical Sciences

PURPOSE: This collection of articles is intended for persons con-
    cerned with the radiochemical analysis of radioactive isotopes.

COVERAGE: The series of studies contained in this collection were
    carried out at the Radiyevyy institut imeni V. G. Khlopina AN
    SSSR (Radium Institute imeni V. G. Khlopin AS USSR). They are

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Radiochemical Analysis (Cont.)   SOV/4853

concerned with the determination of fission yields during the splitting of U^{235}, U^{238}, and Pu^{239} into 14-Mev neutrons and fission neutrons. Individual studies deal with radiochemical methods of separation and purification of the following fission products: Sr^{89}, Sr^{90}, Zr^{95}, Zr^{97}, Mo^{99}, Mo^{101}, Mo^{102}, Ru^{103}, Ru^{106}, Pd^{112}, Ag^{111}, Cd^{115}, Sb^{125}, Te^{132}, J^{132}, Ba^{139}, Ba^{140}, and La^{140}, as well as of the following isotopes: Ca^{45}, Co^{55}, As^{74}, Au^{196}, Au^{198}, Tl^{202}, Tl^{204}, Po^{210}, and U^{237}. The separation and quantitative determination of most isotopes were based on the isotope dilution method. The chemical operations for each of the isotopes were carried out at time intervals that depended on the radioactive transformation of the isotopes. No personalities are mentioned. References accompany individual articles.

TABLE OF CONTENTS:

Tolmachev, Yu. M. On the Radiochemical Method for the   3
Determination of Fission Yields

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Radiochemical Analysis (Cont.)

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AVAILABLE: Library of Congress (QD601.A58)

Card 6/6

JA/dwm/os
3/22/61

24817
S/081/61/000/011/009/040
B105/B203

21.4700

AUTHORS: Moskal'kova, E. A., Popov, D. K., Tolmachev, Yu. M.

TITLE: Separation and purification of radioactive zirconium
             radioisotopes

PERIODICAL: Referativnyy zhurnal, Khimiya, no. 11, 1961. 49. abstract
             11G349 (Radiokhim. analiz produktov deleniya. M-L., AN SSSR,
             1960, 58-62)

TEXT: LaF_3 is twice precipitated from the solution to be analyzed which
contains the carrier Zr and the 44% HF (3ml). The precipitate is
separated, and the $BaZrF_6$ is precipitated from the solution by means of
saturated $Ba(NO_3)_2$ solution. The precipitate is centrifuged, washed with
0.5% HF and water, and dissolved by successive addition of 5 ml of 5% H_3BO_3
solution, 10 ml of water, and 3 ml of concentrated HNO_3. $BaSO_4$ is
precipitated by means of 5% H_2SO_4 from the solution heated to boiling.

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The solution with the precipitate is heated for 10 min, then cooled down, and the $BaSO_4$ precipitate is separated out and washed out by means of 0.1% H_2SO_4. The $Zr(OH)_4$ is precipitated from the filtrate by a 30% KOH solution. The precipitate is centrifuged, washed by means of 1% KNO_3 solution, and dissolved in a minimum quantity of concentrated HCl. The $Zr(OH)_4$ is precipitated once more, and after its dissolution in concentrated HCl, the solution is diluted to 1 N concentration of HCl. The phenyl arsonate of Zr (I) is precipitated out of the solution obtained by adding 5 ml of the 10% solution of phenyl arsonic acid to 6 N HCl. The sediment (I) is separated out, washed out by means of 1 N HCl (containing 0.1% phenyl arsonic acid), and treated with 5 ml of 10% NaOH solution. The $Zr(OH)_4$ precipitated is centrifuged, washed by means of 0.5% NaOH solution, dissolved in concentrated HCl, and the separation of (I) and its conversion $Zr(OH)_4$ are repeated. The latter is dissolved in 6 N HNO_3 by adding 3 ml of 44% HF in 5 mg La. The LaF_3 precipitated is separated out and washed

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Separation and purification of ...   B105/B203

out in 0.5% HF. Subsequently, the $BaZrF_6$ is twice precipitated, and
treated as described above. The $Zr(OH)_4$ is dissolved in concentrated
HCl, and the precipitation and treatment of (I) by conversion to $Zr(OH)_4$
is repeated. The latter is reprecipitated by means of the 10% NH_4OH
solution, centrifuged, annealed to ZrO_2 (1000-1100°C), and its activity
measured. The chemical yield is 65-70%. The factor of purification
from Nb is $\sim 3.0\cdot 10^5$, that from the total of fission fragments is $\sim 10^7$.
The method described for precipitating $BaZrF_6$ is suited for determining
the activity of Ba. In this case, the previous precipitation of LaF_3
is omitted to prevent a capture of radioactive Ba from the solution by
LaF_3. [Abstracter's note: Complete translation.]

Card 3/3

S/081/61/000/014/001/030
B106/B110

AUTHOR: Tolmachev, Yu. M.

TITLE: Dissolution of small amounts of plutonium dioxide

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1961, 49, abstract
            14B320. (Radiokhim. analiz produktsov deleniya, M.-L.,
            AN SSSR, 1960, 134-135)

TEXT: A method of dissolving small amounts (up to 500 mg) of PuO_2 was
suggested.   Quick dissolution of PuO_2 in hot concentrated H_2SO_4 is
hindered by the formation of a thin $Pu(SO_4)_2$ layer which covers the
grain surface.   3 ml of concentrated H_2SO_4 is added to the PuO_2 sample
in a porcelain dish. The dish is heated on a boiling water bath under
continuous stirring; the sulfuric acid must not boil. 10 min after the
beginning of full generation of SO_3 vapors, the dish is cooled to room
temperature, and 5-10 ml of cold distilled water is quickly injected.

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Dissolution of small amounts of...

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After adding 1 ml of concentrated HNO_3, the solution is evaporated on a boiling water bath. The dish is heated over a sand bath until the appearance of SO_3 vapors. After 10 min, the dish is removed from the sand bath, cooled, and the working cycle is repeated once more. A sample of 300 mg of PuO_2 dissolves completely in three working cycles during 3-4 hr if the PuO_2 was calcined below 500°C, and in 7-12 cycles if the PuO_2 was calcined at higher temperatures. [Abstracter's note: Complete translation.]

Card 2/2

21.3100

23000
S/186/61/003/002/010/018
E111/E452

AUTHORS: Solntsev, V.M. and Tolmachev, Yu.M.

TITLE: The reaction of the solution of U_3O_8 in sulphuric acid
I. Kinetics of some reactions with powders

TEXT: The present work was devoted to the examination of the
formal kinetics of reactions of powders in solution. The authors
consider first reactions whose rates $-dm/dt$ do not depend on
diffusion factors but only, for a given value of the rate constant
K, on the phase contact area S. Here m is the mass of
material at time t. Assuming that all the particles of a powder
are identical in size and shape, the authors derive

$$m_0^{\frac{1}{3}} - m^{\frac{1}{3}} = zt.$$

(5)

where m_0 is the mass when $t = 0$ and

$$z = k\,\frac{S_0}{3m_0^{\frac{2}{3}}}.$$

(6)

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The reaction of the solution ...

S_0 being the surface when $t = 0$.   A form of this relation is used in studying reactions of solids with gases (Ref.2: R.L.Farrar, H.A.Smith, J.Phys.Chem., 59, 7, 763 (1955)).   The authors do not consider the recent treatment of P.Barret, R.Hartoulari and R.Perret (Ref.1: C.R., 248, 20, 2862 (1959)) to be applicable. The authors used Eq.(5) in studying the solution of U_3O_8 in sulphuric acid at a temperature controlled with an accuracy of up to 0.1°C.   The oxide was prepared by heating uranium peroxide at 800°C and U^{233} was added to give nominally 10^4 alpha-particles per min per mg of oxide.   Samples of solution were taken periodically from the reaction vessel, the solids were removed by centrifuging and the alpha-activity of the residue on drying the solution on a platinum disc was then measured.   Without mixing, the reaction was found to be of the second order with respect to the acid concentra-tion   C   (in mols) for   C = 4 - 10 mols.   Fig.1 shows the relation between $(m_0^{1/3} - m^{1/3})$ in mg   as a function of time (minutes) for the solution of U_3O_8 in 6 M H_2SO_4 at 60°C.   The results indicate that the powder form is suitable for the investigation of solution kinetics.   For powders with mixed sizes a non-linear relation is obtained between $m^{1/3}$ and   t: this can be resolved into a Card 2/5

The reaction of the solution ...

series of straight lines characteristic of the various fractions.
This treatment gives for the rate constant k the equation

$$k = \frac{\sum 3 z_n m_{0,n}^{\frac{2}{3}}}{q}. \qquad (11)$$

where q is the total surface of all fractions and n is the
number of the fractions.   The authors have used this treatment to
analyse the published data on the solution of various samples of
MgO in dilute sulphuric acid; these data do not conform to Eq.(5)
because the samples consisted of mixtures of size fractions.
Assuming that dye adsorption per unit surface of MgO in the
work was independent of the way in which the oxide was produced and
was the same for all samples, the authors obtain the following

$$f k = k' = \frac{\sum 3 z_n m_{0,n}^{\frac{2}{3}}}{p}. \qquad (13)$$

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in which f is a proportionality factor and p is the percent
absorption of dye.   This can be used to determine rate constants
for the solution of powders of mixed dispersion provided the total
powder surface is known.   The authors next consider reactions
controlled by diffusion through a layer of reaction product.   They
assume, for simplicity, that the layer does not alter the particle
volume and obtain the equation of W. Iander,(Z.anorg. u. allgem.
Chem., 173, 1, 1 (1927).   Next they assume that particle-volume
changes in the reaction and obtain an equation

$$[(m_0^2 + m\beta)^{1/s} - m^{1/s}]^2 = \frac{2kt}{f} = k_1 t. \tag{21}$$

Here

$$a = \frac{M_0 d_p}{d_0 M_p} \tag{20}$$

M_0 and d_0 being the molecular weight and density, respectively,
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The reaction of the solution ...

of the original substance, M_p and d_p those of the product
$\beta = 1 - \alpha$.   Eq.(21) is a more accurate rate expression than that
of Iander and becomes identical to it if $\alpha = 1$.   There are
2 figures, 4 tables and 4 non-Soviet-bloc references.   The
reference to the English language publication reads as follows:
R.L.Farrar, H.A.Smith, J.Phys.Chem., 59, 7, 763 (1955).

SUBMITTED: April 21, 1960

Fig.1.
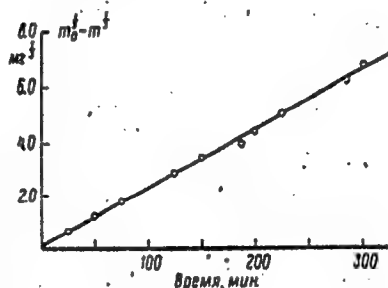
Card 5/5

29820
S/020/61/140/006/017/030
B103/B101

21.4100

AUTHORS: Blinova, N. I., Solntsev, V. M., and Tolmachev, Yu. M.

TITLE: Some particularities of the interaction between uranium mixed oxide and acids

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 6, 1961, 1314-1316

TEXT: The authors studied the discrepancy between the initial and final $UO_2^{2+} : U^{4+}$ ion ratios on dissolution of uranium mixed oxide in acids without oxidizers. This ratio is 2:1 on final solution, whereas in the initial stage, mainly U(VI) is dissolved, so that the ratio U(VI) : U(IV) is much higher than 2:1. High-purity U_3O_8 powder was dissolved in CO_2 atmosphere at constant temperatures (25 or 90°C) in a) sulfuric, b) perchloric, and c) acetic acids. The solutions were analyzed after 100 min (H_2SO_4), 10 min ($HClO_4$), and 40 min (CH_3COOH). U(IV) was determined in the solution by titrating with $KMnO_4$, the total quantity of U by

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S/020/61/140/006/017/030
Some particularities of the interaction ... B103/B101

precipitation as ammonium diuranate and igniting to U_3O_8. Ratios of
76 : 1 in a), 60 :1 in b), and) 300 : 1 in c) were found for the beginning
solution of U_3O_8. After 2 hr, the ratio $U(VI)$: $U(IV)$ in the solution
became 1 : 1 and remained constant, until dissolving was completed. A
precipitation is deposited in the final stage of dissolving, in which the
ratio varies between 2:1 and 1:1. Once the ratio of 1:1 is reached in the
solution as well as in the precipitation, the composition of the
precipitation does not change anymore. This is a dark, slightly violet
colored powder which becomes grey-green on drying in air, the ratio
$U(VI)$: $U(IV)$ approximating 2:1. A ratio of 1:1 is maintained for 48 hr in
the powder, when the water is saturated with CO_2. When U_3O_8 is dissolved
in HNO_3, a stable ratio of 2:1 is conserved in the powder during the entire
time of dissolving. It was found that the uranium atoms in U_3O_8 do not
play the same role. It is difficult to find a different explanation for
the varying $U(VI)$: $U(IV)$ ratios in the solution and in the precipitation
during the reaction of U_3O_8 with acids. It is presumed that U_2O_5 which is

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Some particularities of the interaction... B103/B101

29820
S/020/61/140/006/017/030

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR
              (Radium Institute imeni V. G. Khlopin AS USSR)

PRESENTED: May 24, 1961, by A. A. Grinberg, Academician

SUBMITTED: May 18, 1961

Card 4/4

BLINOVA, N.I.; TOLMACHEV, Yu.M.

Problem of the equivalence of uranium atoms in uranous-uranic
oxide. Radiokhimia 4 no.4:447-451 '62.   (MIRA 15:11)
(Uranium oxide)

L 36063-66   ENT(m)/EWP(t)/ETI   IJP(c)   ES/JD/WW/JG

ACC NR: AP6014723   SOURCE CODE: UR/0186/65/007/006/0722/0725

AUTHOR: Il'inskaya, T. A.; Kuzin, V. I.; Tolmachev, Yu. M.

ORG: none

TITLE: Absorption spectra of uranium oxides.
        I. Infrared absorption spectrum of uranium pentoxide

SOURCE: Radiokhimiya, v. 7, no. 6, 1965, 722-725

TOPIC TAGS: absorption spectrum, uranium compound, IR absorption

ABSTRACT: The article describes the results of a comparative study of
the infrared absorption spectra of U_3O_8, of U_2O_5 obtained from U_3O_8 by
the method of solution in sulfuric acid, and of a substance obtained by
the hydrogen reduction of U_3O_8, which corresponded to the composition
U_2O_5. The starting U_3O_8 was obtained by calcining uranium peroxide,
$UO_4 \cdot 2H_2O$ at 900°C for 7 hours. In some experiments, U_3O_8 prepared from
ammonium diuranate was used. The ratio of the amounts of six- and four-
valent uranium in the U_3O_8 was determined by titration and was found to
be equal to 2.00 ± 0.02. The experimental results are shown in a series
of figures and a large table. The absorption spectra for uranium
pentoxide were obtained in the region 4800-400 cm^{-1}. The spectrum for

                                      UDC: 66.085.1:541.45:546.791

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L 36063-66

ACC NR: AP6014723

U_2O_5 prepared by dissolving U_3O_8 in sulfuric acid differed from the spectra of U_3O_8 and of U_2O_5 obtained by hydrogen reduction, by the presence of an absorption band with maxima at 916 and 670 cm^{-1}. The presence of chains of atoms of the form U--O--U--O... was established in the lattices of uranium pentoxide, as well as in U_3O_8 and $\propto$ -UO_3. The region of the stable state of U_2O_8 obtained by dissolving U_3O_8 in sulfuric acid lies below $400^{\circ}C$. Orig. art. has: 1 figure and 1 table.

SUB CODE: 07, 20/ SUBM DATE: 09Nov64/ ORIG REF: 003/ OTH REF: 002

Card 2/2 vmb

IL'INSKAYA, T.A.; KUZIN, V.I.; TOLMACHEV, Yu.M.

Absorption spectra of uranium oxides. Part 1: Infrared absorption spectrum of U_2O_5. Radiokhimiia 7 no.6:722-725 '65.

(MIRA 19:1)

TOLMACHEV, Z. I.

ACCESSION NR: AP3008085   S/0089/63/015/003/0266/0267

AUTHOR: none

TITLE: Seminar on refractory metals, compounds, and alloys [Kiev, April 1963]

SOURCE: Atomnaya energiya, v. 15, no. 3, 1963, 266-267

TOPIC TAGS: refractory metal, refractory compound, refractory alloy, electron structure, crystal structure, electron beam welding, physical property, vanadium, niobium, molybdenum, single crystal growth, tungsten, rhenium silicide, nonmagnetic zirconium base alloy, tantalum, nonmetallic element diffusion, heat conductivity, electric conductivity, thermal diffusivity

ABSTRACT: In April 1963, a seminar on the extraction, physical properties, and electron structure of refractory metals was held in Kiev under the sponsorship of the Institute of Powder Metallurgy and Special Alloys, Academy of Sciences, Ukrainian SSR. Approximately 300 representatives of scientific research institutes attended the

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ACCESSION NR: AP3008085

seminar. One hundred papers were presented. Among them were the
following:

I. I. Kornilov. The interaction between refractory compounds in-
volving the formation of binary, ternary, and multicomponent solid
solutions.

G. V. Samsonov. Classification of hydrides, nitrides, and other
compounds of nonmetals with elements of the periodic table.

V. N. Yeremenko, Z. I. Tolmachev. The relationship between some
properties and the electron structure of transition metals and their
interstitial phases.

G. V. Samsonov. The nature of the catalytic properties of transition
metals.

I. A. Kedrinskiy, A. I. Avgustinnik, Ye. A. Berkman. Experimental
data on the catalytic activity of refractory metal electrodes in
electrochemical reactions.

Card 2/11

GRIN'KO, Rostislav Iosifovich; ROZOVSKIY, Izrail' L'vovich; TOLMACHEVA,
A.B., red.; PECHKOVSKAYA, O.M., red.izd-va; RAKHLINA, N.P.,
tekhn. red.

[Theory and practice of major straightening work on the Dnieper]
Teoriia i opyt kapital'nykh vypravitel'nykh rabot na Dnepre. Pod
red.A.B.Tolmacheva. Kiev, Izd-vo Akad.nauk USSR, 1962. 126 p.
(MIRA 16:3)

(Dnieper River--Hydraulic engineering)

TOLMACHEV, A.I.

Interaction of pyrylium salts with compounds containing active
methyl or methylene groups. Part 1. Zhur.ob.khim. 33 no.6:
1864-1870 Je '63.   (MIRA 16:7)

1. Institut organicheskoy khimii AN UkrSSR.
                    (Pyrylium compounds) (Nitrogen compounds)

TOLMACHEVA, A.P.; TOLMACHEV, V.A.

Hydrochemical characteristics of tributaries feeding the
Maloye More, Trudy Baik.limnol.sta. 17:192-204 '59.

(MIRA 12:12)

(Sarma River--Water--Composition)
(Maloye More region--Water--Composition)

TOLMACHEVA, A.P.; TOLMACHEV, V.A.

      Hydrochemical characteristics of the Maloye More. Trudy Baik.
      limnol.sta. 17:137-191 '59.   (MIRA 12:12)
          (Maloye More--Water--Composition)

ANISOV, Aleksandr Andreyevich; DUNDUKOV, Grigoriy Stepanovich;
    IL'IN, Nikolay Ivanovich, doktor ekon. nauk, prof.;
    TOLMACHEVA, A.V.,red.; GROMOV, A.S., tekhn. red.;
    EL'KINA, E.M., tekhn. red.

    [Accounting in public dining]Bukhgalterskii uchet v ob-
    shchestvennom pitanii. 2., perer. izd. Pod red. N.I.
    Il'ina. Moskva, Gostorgizdat, 1962. 269 p.
                                            (MIRA 15:10)
        (Restaurants, lunchrooms, etc.—Accounting)

BREYTBURG, Abram Moiseyevich, prof.; TOLMACHEVA, A.V., red.; MEDRISH,
     D.M., tekhn.red.

     [Biological chemistry] Biologicheskaia khimiia. Moskva, Gos.
izd-vo torg.lit-ry, 1959. 408 p.   (MIRA 13:3)
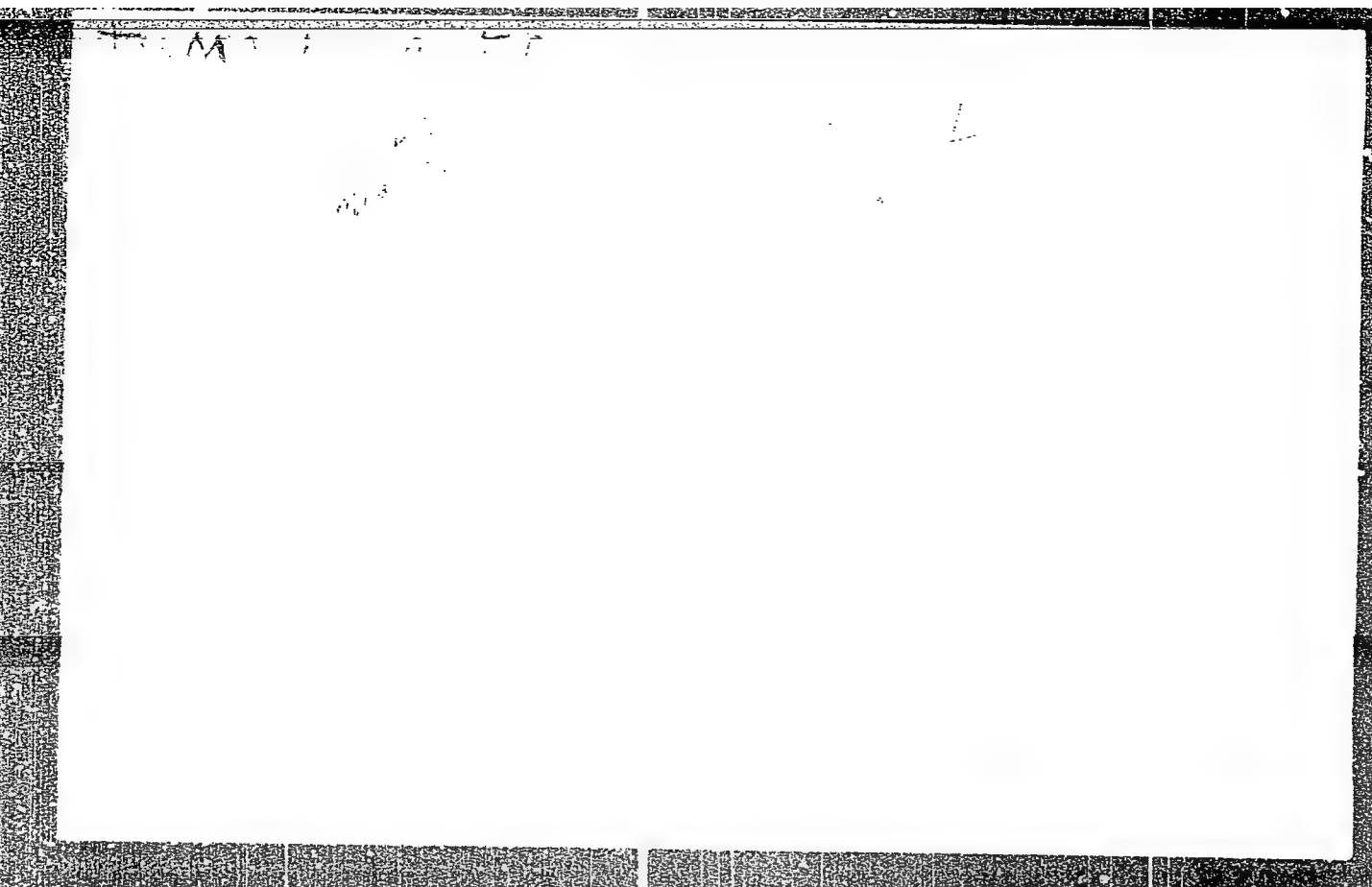   (Biological chemistry)

VASIL'YEV, Stepan Sergeyevich; TOLMACHEVA, A.V., red.; VOLKOVA,
          V.G., tekhn. red.

     [Economics of public food service] Ekonomika obshchestven-
     nogo pitaniia. Moskva, Gos.izd-vo torg. lit-ry, 1963. 430 p.
                                              (MIRA 16:9)
        (Food industry) (Restaurants, lunchrooms, etc.)

THE ABSORPTION SPECTRA OF

PETRAKOVA, K.V.; TOLMACHEVA, A.A.; FRIDENSHTEYN, A.Ya.

Bone formation following marrow transplantation in diffusion
chambers. Biul. eksp. biol. i med. 56 no.12:87-91 D '62.

(MIRA 17:11)

1. Otdel radiatsionnoy mikrobiologii i immunologii (zav. M.Ya.
Tumanyan) Instituta epidemiologii i mikrobiologii imeni Gamalei
(dir. - prof. P.A. Vershilova) AMN SSSR, Moskva.

VOTINTSEV, Konstantii Konstantinovich; GLAZUNOV, Ivan Vladimirovich;
TOLMACHEVA, Anna Petrovna; GALAZIY, G.I., otv. red.

[Geochemistry of the rivers of the lake Baikal basin.] Gidrokhimiia
rek basseina ozera Baikal. Moskva, Nauka, 1965. 494 p. (Akademiia
nauk SSSR. Sibirskoe otdelenie. Limnologicheskii institut. Trudy,
vol. 8(28)).   (MIRA 18:7)

1. Nauchnyye sotrudniki Baykal'skoy limnologicheskoy stantsii
AN SSSR (for Tolmacheva, Glazunov).

BORISOVA,Ye.A.; TOLMACHEVA,A.V., redaktor; ROSLOV,G.I., tekhnicheskiy
redaktor

[Technical and chemical control in public eating enterprises;
textbook] Tekhno-khimicheskii kontrol' v predpriiatiiakh ob-
shchestvennogo pitaniia; uchebnoe posobie dlia tekhnikumov.
Moskva, Gos. izd-vo torgovoi lit-ry, 1955. 111 p. (MLRA 9:2)
(Food--Analysis)

BREYTBURG, Abram Moiseyevich; TOLMACHEVA, A.V., red.; MEDRISH, D.M.,
tekhn.red.

[Efficient nutrition] Ratsional'noe pitanie. Moskva, Gos.izd-vo
torgovoi lit-ry, 1957. 150 p.   (MIRA 11:1)
                        (Nutrition)

ANAN'YEV, A.A.; TOLMACHEVA, A.V., redaktor.

[The making of soups] Prigotovlenie pervykh bliud. Izd.2.,perer.
i dop. Moskva, Gos.torgovoe izd-vo, 1953. 94 p.   (MLRA 7:4)
                                        (Soups) (Cookery)

L 05441-67   EWT(1)/FCC   GW

ACC NR: AP6018928   SOURCE CODE: UR/0203/66/006/003/0600/0602

AUTHOR: Belikovich, V. V.; Benediktov, Ye. A.; Tolmacheva, A. V.   44
                                                                                13

ORG: Institute of Radio Physics, Gor'kiy State University (Radiofizicheskiy institut pri Gor'kovskom gosudarstvennom universitete)

TITLE: A possible interpretation of the frequency dependence of anomalous absorption of cosmic radiation

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 3, 1966, 600-602

TOPIC TAGS: cosmic radiation, radio wave absorption, magnetic storm, ionospheric absorption

ABSTRACT: The authors have proposed their own explanation, based on a nonuniform or heterogeneous ionization region in the horizontal plane, of the test results for the anomalous absorption of cosmic radiation in the ionosphere on several fixed frequencies observed during three world-wide magnetic disturbances, cited in a previous paper (Ye. A. Benediktov, Yu. S. Korobkov, A. V. Tolmacheva. Geomagn. i aeronomiya, 1965, 5, no. 4, 698). On the assumption that the radiation is uniformly distributed over the sky and by substituting for the

Card   1/2   UDC: 550.388.2

L 05421-67

ACC NR: AP6018928

$\circ$

real radiation pattern of the antenna a certain effective pattern described only by the solid angle Ω_0, formulas are obtained for the recorded level of cosmic radiation and for the ratio of the quantity of absorption as measured radio-astronomically to the "true" quantity. It is shown that the problem of determining the frequency dependence of anomalous radio wave absorption in the ionosphere becomes vastly more complex, unless additional information is available regarding the degree of ionization homogeneity in the horizontal direction. Using the formula obtained, an attempt is made to define the heterogeneous structure of the ionization region through a computation of the frequency function $\Gamma(\omega)$ on the basis of data from the three magnetic storms. The examples given show that the presence of a nonuniformly structured anomalous ionization region can significantly distort radio-astronomically derived information regarding the altitudes at which radio waves passing through the ionosphere are subject to maximum absorption. Orig. art. has: 2 figures and 3 formulas.

SUB CODE: 03/ 04/ SUBM DATE: 28Oct65/   ORIG REF: 002/   OTH REF: 002

Card   2/2

L 1713-66   EWT(1)/FCC/EWA(h)   GW

ACCESSION NR: AP5020999   UR/0203/65/005/004/0698/0704

                                  550.388.3:550.385.2

AUTHOR: Benediktov, Ye. A.; Korobkov, Yu. S.; Tolmacheva, A. V.

TITLE: Anomalous ionization of the lower ionosphere over temperate latitudes during global geomagnetic storms

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 698-704

TOPIC TAGS: ionospheric absorption, ionospheric inhomogeneity, magnetic storm, geomagnetic disturbance radio wave absorption

ABSTRACT: Anomalous ionization of the lower ionosphere, causing additional absorption of radio waves, is observed during global geomagnetic storms over temperate geographic latitudes. This paper reports on measurements of flareups in radio wave ionospheric absorption made at Zimenki near Gorky ($\varphi = 56^{\circ}09'$, $\phi = 50^{\circ}21'$) during global geomagnetic storms on July 15, 1959, April 1, 1960, and October 28, 1961. The first two storms were registered at 25 and 18.6 Mc, and the last one was tracked at 9, 13, and 25 Mc by means of synphase multi-dipole antenna systems. The following findings were made. 1) Anomalous absorptions appeared in the form of consecutive absorption bursts lasting from several minutes to several dozen minutes.

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ACCESSION NR: AP5020999

2) They appeared regularly at the end of the first phase of the magnetic storm
and continued to appear while the storm developed. 3) In the case of the last
two storms, some correlation apparently exists between the geomagnetic field
variations and the absorption occurrences. 4) During the same two storms, short
(5 min) fadeouts of cosmic radiation were observed over periods of several hours
prior to the appearance of anomalous absorptions. These fadeouts were not accom-
panied by solar chromospheric flares. 5) The ratio of absorption intensities at
two frequencies was smaller than the inverse of the ratio of the squares of the
respective frequencies. 6) Numerous bursts of solar radiation at 18.6 and 25 Mc
were registered on July 25, 1959, by the side lobes of the antenna. 7) The magni-
tude of the anomalous 13-Mc cosmic radio wave absorption 45° over the horizon did
not exceed 0.2 to 0.3 db while the zenith absorption at the same frequency reached
2—3db. 8) Changes in the 27.8-Mc cosmic radio wave intensity observed by IZMIRAN
at Krasnaya Pakhra on July 15, 1959, led the absorption bursts at Zimenki by 8—12
minutes. 9) At the vertical probing station, the reflected signal was missing
during the periods of abnormal absorption. Analysis of ionospheric cosmic radiation
and absorption results shows that anomalous ionization occurs at altitudes of
approximately 50 km and the electron concentration attains 10^3 electrons/cm^3.
The authors discuss and give an estimate of the primary electron flux needed for
the generation of the observed level of anomalous ionization. "The authors

Card 2/3

L 1713-66

ACCESSION NR: AP5020999

thank A. A. Beloborodova for help during the processing of data." Orig. art.
has: 6 formulas, 1 figure, and 4 tables.   [08]

ASSOCIATION: Radiofizicheskiy institut pri Gor'kovskom gosudarstvennom universitete
(Radio Physics Institute at Corky State University)

SUBMITTED: 24Aug64   ENCL: 00   SUB CODE: ES

NO REF SOV: 006   OTHER: 009   ATD PRESS: 4096

Card 3/3

TOLMACHEVA, A.V.

BREMENER, Solomon Mikhaylovich, kandidat meditsinskikh nauk; KROTKOV,
F.G., professor, redaktor; LUCHKINA,N.N., redaktor; TOLMACHEVA,
A.V., redaktor; SUDAK,D.M., tekhnicheskiy redaktor

[Hygiene in public catering with fundamentals in anatomy and
physiology] Gigiena obshchestvennogo pitaniia (s osnovami ana-
tomii i fiziologii). Izd. 2-e, dop. i perer. Moskva, Gos.izd-vo
torgovoi lit-ry, 1955. 280 p.   (MIRA 9:2)
        (FOOD HANDLING) (ANATOMY) (PHYSIOLOGY)

TOLMACHEVA, A. Ye.   (Rostov-na-Donu)

Development of the production of kumiss. Vop.pit. 22 no.1:
3-8   Ja-F'63   (MIRA 16:11)

TOLMACHEVA, E.

11B

Calomel electrode and a stand for several simultaneous determinations of the oxidation-reduction potential of blood. E. Tolmacheva. *Lab. Prakt.* (U. S. S. R.) 16, No. 3, 21-3 (1941).—For the construction of the comparison electrode shorten the lower end and cut off the wide part of a Mohr pipet. Attach a test tube with 2 side openings (one above the other) to the pipet. Place some Hg and calomel in the test tube and lower a Pt electrode sealed in a glass into Hg. Draw some 3% agar-agar in a satd. KCl soln into the thin end of the Mohr pipet until it reaches the wide part of the pipet and add some satd. KCl soln. over the agar-agar. Add also some satd. KCl soln. to the test tube. During the detn. of the oxidation-reduction potential the calomel electrode is kept in the KCl soln. The electrodes must be stored in a satd. KCl soln.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

NUMANOV, I.U.; SKOBELINA, A.I.; TOLMACHEVA, G.L.; YAKUBOV, Kh.M.

Sulfur organic compounds of petroleums from the southern part
of Central Asia. Report No.1: Sulfur organic compounds of
petroleums from the Kzyl-Tumshuk and Khaudag deposits. Izv.
Otd. geol.-khim. i tekh. nauk AN Tadzh. SSR no.1:69-78 '59.
(MIRA 14:8)

1. Institut khimii AN Tadzhikskoy SSR.
        (Kzyl-Tumshuk—Petroleum—Analysis)
        (Khaudag—Petroleum—Analysis)
            (Sulfur organic compounds)

ACC NR: AR<022460   SOURCE CODE: UR/0169/66/000/003/B043/B043

AUTHOR: Zaslavskaya, F. V.; Navrotskaya, V. S.; Tolmacheva, I. A.; Medvedev, G.A.

TITLE: Aerological patterns of foehns as observed in the Rion Valley OGMI expedition during September-October of 1962

SOURCE: Ref. zh. Geofiz, Abs. 3B278

REF SOURCE: Meteorol., klimatol. i gidrol. Mezhved. nauchn., vyp. 1, 1965, 17-22

TOPIC TAGS: weather forecasting, weather station, meteorologic observation

TRANSLATION: An account is given of the results of investigation of the wind and temperature patterns in the atmosphere, which was conducted by members of this expedition. The purpose of the expedition was to investigate the foehn winds on the Surah Pass which rises to 1242 m above sea level near the Mta-Sabueti station. The investigation lasted from September 19 to October 12. Supplementary data were obtained from Kutaisi Tbilissi and other points in the TransCaucasus. At Kutaisi the easterly wind, having a velocity of 5 m/sec, lowers the relative humidity to 50% in some 80% of the cases. Such wind could be classed as foehn. However, the foehn characteristics are seldom observed and its velocity is usually less than 5 m/sec. The relationship between the temperature and the air humidity on one hand and wind velocity on the other was found to be complex. As the wind velocity increases, the relative humidity decreases and

UDC: 551.555.3(479.2)

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ACC NR: AR6022460

the temperature of the air rises. The foehn effect is sharper at nighttime, when the directions of the foehn and the mountain wind may coincide. In the daytime, a valley wind might develop in the Rio Valley in a direction opposite to that of the foehn. As a result, the velocity of wind from the east is increased and that of the foehn, weakened. On the days of the foehn wind over the Surah range, an inversion or an isotherm may develop. The wind from the east may be felt as far away as 2 km. Occasionally at the Kutaisi Pass, the winds from the east were stronger than at the Surah Pass. N. Davydov.

SUB CODE: 04

Card 2/2

TAYTS, N.Yu., doktor tekhn. nauk; KLEYNER, M.K., inzh.; ZAVALISHIN,
Ye.K., inzh.; KALUGIN, Ya.P., inzh.; FALILEYEV, I.L., inzh.;
KAGAN, N.I., inzh. [deceased]; Prinimali uchastiye: POPOV,
V.N. inzh.; CHUYKOV, A.A., inzh.; MINUKHINA, L.N., inzh.;
KHATSAREVICH, V.R., inzh.; TOLMACHEVA, I.A., inzh.; BAZHENOVA,
V.N., inzh.

Technological and thermodynamic characteristics of strip
heating for the continuous furnace welding of pipes.
Stal'24 no.8:746-750 Ag '64.   (MIRA 17:9)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut,
Ural'skiy nauchno-issledovatel'skiy trubnyy institut i
Chelyabinskiy truboprokatnyy zavod.

SOKOLOV, V.N.; TOLMACHEVA, L.I.

Determining the extent of mechanization in the liqueur and vodka
industry. Spirt.prom. 28 no.2:30-33 '62.   (MIRA 15:3)

1. TSentral'nyy nauchno-issledovatel'skiy institut spirtovoy
promyshlennosti.
                         (Liquor industry)